

Notice of Allowability

Application No.

10/565,373

Examiner

Bernard E. Souw

Applicant(s)

KIM, HO SEOB

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. This communication is responsive to 1/20/2006 (Pre Amendment).2. The allowed claim(s) is/are 1-20.3. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).a) All b) Some* c) None of the:1. Certified copies of the priority documents have been received.2. Certified copies of the priority documents have been received in Application No. _____.3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.5. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.(a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) hereto or 2) to Paper No./Mail Date _____.(b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of
Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.**Attachment(s)**1. Notice of References Cited (PTO-892)5. Notice of Informal Patent Application2. Notice of Draftsperson's Patent Drawing Review (PTO-948)6. Interview Summary (PTO-413),
Paper No./Mail Date _____.3. Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____7. Examiner's Amendment/Comment4. Examiner's Comment Regarding Requirement for Deposit
of Biological Material8. Examiner's Statement of Reasons for Allowance
9. Other _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), (JP-10-2003-0051474), filed 07/25/2003, which papers have been placed of record in the file.
2. Receipt is acknowledged of papers submitted under 35 U.S.C. 371 (PCT/KR2004/001841) which papers have been placed of record in the file.

Information Disclosure Statement

3. The references cited in the Search Report to PCT/KR2004/001841 filed on 01/20/2006 have been considered, but will not be listed on any patent resulting from this application because they were not provided on a separate list in compliance with 37 CFR 1.98(a)(1). In order to have the references printed on such resulting patent, a separate listing, preferably on a PTO/SB08A and 08B form, must be filed within ONE MONTH of the mailing date of this communication. NO EXTENSION OF TIME WILL BE GRANTED UNDER EITHER 37 CFR 1.136(a) OR (b) to comply with this requirement.

Preliminary Amendment

4. The Preliminary Amendment filed on 01/20/2006 has been entered. The present Office Action is made with all the suggested amendments being fully considered.

The claims have been amended.

No claim has been cancelled.

New claims 9-20 have been added.

Claims 1-20 are pending in this Office Action.

ALLOWANCE

5. Claims 1-20 are allowed.

Reasons for Allowance

6. The following is an examiner's statement of reasons for allowance:

► Claim 1 is allowed for reciting a method for manufacturing a lens assembly of an electron beam microcolumn having a plurality of microlenses, each provided with a hole at a central position thereof, and a plurality of insulating layers alternately interposed between the microlenses, the method comprising:

- forming at least one first microlens assembly by anodic-bonding an insulating layer and a microlens together, so that a part of a surface of the insulating layer is not covered by the microlens;
- layering the first microlens assembly on a second microlens or a second microlens assembly, while aligning the holes of the microlenses, so that the second microlens

or the microlens of the second microlens assembly is in contact with the insulating layer of the first microlens assembly, while the part of the insulating layer of the first microlens assembly that is not covered by the first microlens is in contact with the second microlens or the microlens of the second microlens assembly; and

- scanning a laser beam to bond the part of the insulating layer of the first microlens assembly that is not covered by the first microlens to the second microlens or the microlens of the second microlens assembly by passing the laser beam through the part of the insulating layer of the first microlens assembly, thus welding the first microlens assembly to the second microlens or the microlens of the second microlens assembly.

- ▶ Claim 2 is additionally allowed for reciting the same method as claim 1, with an additional step that the microlens and the insulating layer of each of the microlens assembly are anodic-bonded together after the microlens of each of the microlens assembly is rotated on the insulating layer around the hole thereof at a predetermined angle.
- ▶ Claims 8 and 15 are also allowed for reciting a lens assembly manufactured through the method of claims 1 and 2, respectively.
- ▶ Claims 3-7, 9-14, and 16-20 are also allowed for their dependency, either directly or indirectly, to the previously allowed claim 1, 2, 8 or 15.

Relevant Prior Art

7. This prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

(a) USPAT 6,281,508 issued to Lee et al. discloses a method for manufacturing a lens assembly for an electron beam microcolumn having a plurality of microlenses and a plurality of insulating layers alternately interposed between the microlenses, each microlens layer and insulating layer having an alignment hole. However, unlike the present invention, Lee's alignment hole does not need to be at a central position, as can be seen in Figs.1 and 5. This is because, as recited by Lee et al. in Col.5/II.8-11, laser welding is only an alternative to anodic bonding to attach the stack to each other, so there is no necessity to align the insulating layer and the microlens in such a way that a part of a surface of the insulating layer is not covered with the microlens. The latter is required by the present invention, since laser-welding is part of the claim limitations.

(b) USPAT 6,195,214 issued to Muray et al. discloses a method for manufacturing a lens assembly for an electron beam microcolumn having a plurality of microlenses and a plurality of insulating layers alternately interposed between the microlenses, which are bonded together by means of laser spot welding instead of anodic bonding. Therefore, Muray's insulating layer must be aligned to the microlens in such a way that a part of a surface of the insulating layer is not covered with the microlens, i.e., for the laser beam to pass through and carry out the spot welding. However, Muray's invention does not make use of alignment hole.

Communications

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard E Souw, Ph.D., whose telephone number is

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571 272 2482. The examiner can normally be reached on Monday thru Friday, 9:00 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571 272 2293. The central fax phone number for the organization where this application or proceeding is assigned is 571 273 8300 for regular communications as well as for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571 272 5993.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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July 28, 2007



David A. Vassar
Primary Examiner
Art Unit 2881